



**VELAGAPUDI RAMAKRISHNA  
SIDDHARTHA ENGINEERING COLLEGE**  
(AUTONOMOUS)  
Kanuru, Vijayawada-520007, AP, India

**B.Tech Degree with Honors**

**DEPARTMENT OF CIVIL ENGINEERING**

**LIST OF COURSES OFFERED UNDER HONORS**

S. No.	Course Code	COURSE NAME	L	T	P	Credits
<b>FOURTH SEMESTER</b>						
1	20CEH4801A	StabilityofStructures	3	1	0	4
2	20CEH4804B	Sustainable Construction Methods	3	1	0	4
3	20CEH4801C	Design of Formwork	3	1	0	4
<b>FIFTH SEMESTER</b>						
4	20CEH5802A	EngineeringRockMechanics	3	1	0	4
5	20CEH5801B	Advanced SteelDesign	3	1	0	4
6	20CEH5804C	GeospatialDataProcessing	3	1	0	4
<b>SIXTH SEMESTER</b>						
7	20CEH6803A	Traffic Analysis and Design	3	1	0	4
8	20CEH6803B	TransportationEconomics	3	1	0	4
9	20CEH6802C	AdvancedFoundationEngineering	3	1	0	4

**SEVENTH SEMESTER**

10	20CEH7802A	Geo Synthetics and Reinforced Soil Structures	3	1	0	4
11	20CEH7803B	IntelligentTransportationSystems	3	1	0	4
12	20CEH7804C	EnvironmentalImpactAssessment	3	1	0	4

S. No.	Course Code	COURSE NAME	L	T	P	Credits
1	20CEM5811	SELF LEARNING				2
2	20CEM7812	SELF LEARNING				2

## HONOR DEGREE IN COMPUTER SCIENCE & ENGINEERING

### Semester 4 (2-2)

S.No	Course Code	Stream	Course Name	L	T	P	Credits
1	20CSH4801A	Artificial Intelligence and Machine Learning	Advanced Python Programming	3	1	0	4
2	20CSH4801A	Data Science	Advanced Python Programming	3	1	0	4
3	20CSH4801B	Internet of Things and Cloud	Fundamentals of IoT & Cloud	3	1	0	4
4	20CSH4801C	Cyber Security and Blockchain	Information Security	3	1	0	4
5	20CSH4801D	Augmented Reality and Virtual Reality	Game Design & Asset Creation	3	1	0	4
6	20CSH4801E	Full Stack Development	Frontend Technologies	3	1	0	4

**ELECTRONICS & COMMUNICATION ENGINEERING**  
**List of Courses offered under HONORS in VR20**

Course Code	Course Name	L	T	P	Credits
<b>Module – I (Semester IV)</b>					
<b>20ECH4801A</b>	Design and Applications of Analog CMOS Integrated Circuits	4	0	0	4
<b>20ECH4801B</b>	Elements of Data Communications	4	0	0	4
<b>20ECH4801C</b>	Linear Algebra	3	1	0	4
<b>20ECH4801D</b>	Electromagnetic Interference and Compatibility	4	0	0	4
<b>20ECH4801E</b>	Programming languages for embedded software	3	1	0	4
<b>Module – II (Semester V)</b>					
<b>20ECH5802A</b>	Sensors and Actuators	4	0	0	4
<b>20ECH5802B</b>	Advanced Computer Networks	4	0	0	4
<b>20ECH5802C</b>	Discrete spectral analysis	3	1	0	4
<b>20ECH5802D</b>	Computational Electromagnetics	3	1	0	4
<b>20ECH5802E</b>	Testing and Testability	4	0	0	4
<b>Module – III (Semester VI)</b>					
<b>20ECH6803A</b>	Micro Chip Fabrication Technology	4	0	0	4
<b>20ECH6803B</b>	Modern Data Networks	4	0	0	4
<b>20ECH6803C</b>	Multirate signal processing and wavelets	3	1	0	4
<b>20ECH6803D</b>	RF System Design And Measurements	4	0	0	4
<b>20ECH6803E</b>	Communication Busses and Interfaces	4	0	0	4
<b>Module – IV (Semester VII)</b>					
<b>20ECH7804A</b>	Biomedical Electronics	4	0	0	4
<b>20ECH7804B</b>	MIMO OFDM Communication Systems	4	0	0	4
<b>20ECH7804C</b>	Medical imaging and processing	4	0	0	4
<b>20ECH7804D</b>	Planar Antennas For Wireless Applications	4	0	0	4
<b>20ECH7804E</b>	Device Drivers	4	0	0	4
<b>20ECH5811</b>	Self Learning Course/MOOCs Course 1				2
<b>20ECH7812</b>	Self Learning Course/MOOCs Course 2				2
<b>Total</b>					20

**DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**  
**HONORS IN ELECTRICAL & ELECTRONICS ENGINEERING**

S.No	Course Code	Title of the Course	L	T	P	Credits
<b>Fourth Semester</b>						
1.	20EEH4801A	Utilization of Electrical Energy	4	0	0	4
2.	20EEH4801B	Digital Signal Processing	4	0	0	4
3.	20EEH4801C	Renewable Energy Systems	4	0	0	4
4.	20EEH4801D	Electrical Materials	4	0	0	4
<b>Fifth Semester</b>						
5.	20EEH5802A	Renewable Energy Systems	4	0	0	4
6.	20EEH5802B	Energy Conservation & Audit	4	0	0	4
7.	20EEH5802C	Industrial Applications in Electrical Engineering	4	0	0	4
8.	20EEH5802D	Energy Storage Systems	4	0	0	4
9.	20 EEH5811	Self Learning Course	0	0	0	2
<b>Sixth Semester</b>						
10.	20 EEH6803A	Special Electrical Machines	4	0	0	4
11.	20 EEH6803B	Utilization of electrical energy	4	0	0	4
12.	20 EEM6803C	Introduction to Smart Grid	4	0	0	4
13.	20 EEM6803D	Electrical Drives	4	0	0	4
<b>Seventh Semester</b>						
14.	20 EEH7804A	Power Quality	4	0	0	4
15.	20 EEH7804B	Linear Control Systems	4	0	0	4
16.	20 EEH7804C	PLC	4	0	0	4
17.	20 EEH7804D	Electric Vehicles	4	0	0	4
18.	20 EEH7812	Self Learning Course	0	0	0	2

**V.R.SIDDHARTHA ENGINEERING COLLEGE (Autonomous)**

**Department of Electronics & Instrumentation Engineering**

**Honors in Electronics and Instrumentation Engineering**

S.No	Course Code	Name of the Course	L	T	P	Credits
<b>Semester IV</b>						
1.	20EIH4801A	Computational Methods for Linear Control Systems	4	0	0	4
2.	20EIH4801B	Fiber Optic Sensors	4	0	0	4
3.	20EIH4801C	Computational Methods for Signal Processing	4	0	0	4
4.	20EIH4801D	Real Time Operating Systems	4	0	0	4
<b>Semester V</b>						
1.	20EIH5802A	Optimization Techniques	4	0	0	4
2.	20EIH5802B	Micro Electro Mechanical Systems	4	0	0	4
3.	20EIH5802C	Advanced Digital Signal Processing	4	0	0	4
4.	20EIH5802D	Reconfigurable Architectures	4	0	0	4
<b>Semester VI</b>						
1.	20EIH6803A	Modern Control Systems	4	0	0	4
2.	20EIH6803B	Principles and Applications of nanotechnology	4	0	0	4
3.	20EIH6803C	Computer Vision	4	0	0	4
4.	20EIH6803D	System on chip	4	0	0	4
<b>Semester VII</b>						
1.	20EIH7804A	Digital Control System Design	4	0	0	4
2.	20EIH7804B	Multi Sensor Data Fusion	4	0	0	4
3.	20EIH7804C	Deep Learning for Computer Vision	4	0	0	4
4.	20EIH7804D	Embedded Control Systems	4	0	0	4
	20EIM5811	SELF LEARNING				2
	20EIM7812	SELF LEARNING				2

Two MOOCS/NPTEL Courses for 04 credits (02 courses @ 2 credits each) are mandatory

**VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**COURSES OFFERED UNDER HONOR DEGREE IN AI & DATA SCIENCE**

<b>S.No</b>	<b>Course code</b>	<b>Course Name</b>	<b>Offered in Semester</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
<b>1</b>	20ITH4801	AI Foundations for Business	<b>IV</b>	4	0	0	4
<b>2</b>	20ITH5802	Reinforcement Learning	<b>V</b>	4	0	0	4
<b>3</b>	20ITH6803	End-to-end Machine Learning with Tensor Flow on GCP	<b>VI</b>	4	0	0	4
<b>4</b>	20ITH7804	Deep Learning for Health Care	<b>VII</b>	4	0	0	4
<b>(MOOCs - Self Learning)</b>							
<b>5</b>	20ITH5811	Advanced Data Science	<b>V</b>	-	-	-	2
<b>6</b>	20ITH7812	Machine Learning Engineering for Production	<b>VII</b>	-	-	-	2

**VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**COURSES OFFERED UNDER HONOR DEGREE IN CYBER SECURITY**

S.No	Course Code	Title of the course	Offered in Semester	L	T	P	Credits
1	20ITH4801A	Data Privacy	IV	4	0	0	4
	20ITH4801B	Cryptanalysis	IV	4	0	0	4
2	20ITH5802A	IoT and Security	V	4	0	0	4
	20ITH5802B	Big Data Security	V	4	0	0	4
3	20ITH6803A	Cyber Physical Systems	VI	4	0	0	4
	20ITH6803B	Cloud Security	VI	4	0	0	4
4	20ITH7804A	Blockchain security and performance	VII	4	0	0	4
	20ITH7804B	Data Analytics for Fraud Detection	VII	4	0	0	4
<b>MOOCs - SELF LEARNING COURSES</b>							
1	20ITH5811	Information Security and Cyber Forensics	V	-	-	-	2
2	20ITH7812	Online privacy	VII	-	-	-	2



**DEPARTMENT OF MECHANICAL ENGINEERING**  
**HONORS IN MECHANICAL ENGINEERING**

S.No	Course Code	Title of the Course	L	T	P	Credits
<b>Fourth Semester</b>						
1.	20 MEH4801A	Introduction to Composite Materials	4	0	0	4
2.	20 MEH4801B	Energy Systems and Management	4	0	0	4
3.	20 MEH4801C	Production and operations management	4	0	0	4
<b>Fifth Semester</b>						
4.	20 MEH5802A	Robotics & Automation	4	0	0	4
5.	20 MEH5802B	Alternate Fuels	2	0	4	4
6.	20 MEH5802C	Precision Engineering	4	0	0	4
	20MEM5811	SELF LEARNING				2
<b>Sixth Semester</b>						
7.	20 MEH6803A	Vibration and Noise Engineering	3	1	0	4
8.	20 MEH6803B	Solar Energy Systems	4	0	0	4
9.	20 MEH6803C	Advanced Manufacturing Processes	4	0	0	4
<b>Seventh Semester</b>						
10.	20 MEH7804A	Fault Diagnostics & Condition monitoring	4	0	0	4
11.	20 MEM7804B	Experimental Methods in Thermal Engineering	4	0	0	4
12.	20 MEM7804C	Automation in Manufacturing	4	0	0	4
	20MEM7812	SELF LEARNING				2